

Abstract

A system for measuring parameters of a structure, the system in certain aspects having a plurality of strain gauges emplaceable on the structure, signal transmission apparatus associated with the plurality of strain gauges for transmitting signals therefrom indicative of gauge measurements to computer apparatus for processing the signals, the gauges, in one aspect, including at least three strain gauge apparatuses for providing axial strain measurements, and computer apparatus for receiving signals from the transmitting apparatus indicative of the measurements and for determining bending moment and bending direction of the structure at a location of the gauge apparatuses, and in one aspect wherein the computer apparatus is programmed to calculate internal pressure and/or bending direction of the structure based on the measurements, and in one aspect to do so in real time.